Draft Individual Review Form

Proposal number: 2001-F210-1 Short Proposal Title: Bioaccumulation in Invertebrates and Fish

1a) Are the objectives and hypotheses clearly stated?
The proposal clearly states its objective to study the effects of bioaccumulation of heavy metals and hydrophobic pesticides, singly or in combination, in benthic, epi-benthic, and fish species. Each task within the proposal contains a specific hypothesis to be tested.

1b1) Does the conceptual model clearly explain the underlying basis for the proposed work?
The conceptual model clearly states the physical, chemical, and biological relationships associated with bioaccumulation of sediment bound toxicants. The conceptual model illustrates the trophic level represented by each species to be studied and their associated bioaccumulation pathways. Clear, scientifically based links are illustrated between each study component.

1b2) Is the approach well designed and appropriate for meeting the objectives of the project?
The approach to this project is well thought out, directly related to the project objectives, and displays strong linkages between project components. A positive component of the approach is that the laboratory experiments are scheduled to begin one year after the fieldwork section of the study begins to ensure that the laboratory experiments represent conditions likely to be encountered in the field.

1c1) Has the applicant justified the selection of research, pilot or demonstration project, or a full-scale implementation project?
The applicant justifies this research project on the basis that multiple stress effects of bioaccumulation of heavy metals and hydrophobic pesticides in aquatic species have not been quantified.

1c2) Is the project likely to generate information that can be used to inform future decision making?
This proposal would provide a wide variety of information that could be useful to future decision making. Both the field and laboratory data generated will provide information that will aid in the understanding of physical, biological, and chemical responses of the system to heavy metal and hydrophobic pesticide concentrations. The applicants state that data will be available to other entities in electronic data bases, summary reports, and fact sheets.

2a) Are the monitoring and information assessment plans adequate to assess the outcome of the project?
The design of the field-monitoring program meets the goals of the project. The field program design is a well planned, realistic extension of an existing successful monitoring program by the California Department of Water Resources.

2b) Are data collection, data management, data analysis, and reporting plans well-described, scientifically sound and adequate to meet the proposed objectives?
The field data collection, data analysis, laboratory experiment design, laboratory experiment analysis, and project reporting portions of the proposal are all well thought out and described in extensive detail that demonstrates previous experience and success with related projects.

3) Is the proposed work likely to be technically feasible?
The scope of work presented in the proposal demonstrates previous experience in all project areas. Tasks are allocated realistic time frames and follow a logical sequence. The researchers are associated with lab facilities that contain state of the art equipment allowing for detection of low level concentrations of toxicants, thus improving the potential success of this project.

4) Is the proposed project team qualified to efficiently and effectively implement the proposed project?
The project team is extremely qualified to conduct this research. Collaboration and communication with related research projects will improve the efficiency of the project.

Miscellaneous comments

This proposal is extremely well planned and written. The researchers have extensive experience in related projects. The project is focused enough in scope to be realistically completed (four species will be examined), but at the same time spans several trophic levels and logically addresses a variety of issues given high priority by CALFED. The linkages between the project components are well defined. Collaborations with existing projects and field monitoring efforts increase the benefit-cost ratio of this project. The project would provide valuable data and insight into effects of combined stresses imposed by toxicants on sensitive species in the Bay-Delta system.

Overall Evaluation Summary Rating	**Provide a brief explanation of your summary rating**
☐ Excellent	Funding for this project is highly recommended.